

CONSUMERS UNION *reports-*

DECEMBER
1936

15 1937

VACUUM CLEANERS

NOSE DROPS

ELECTRIC IRONS

FOUNTAIN PENS

BLANKETS

TOMATO JUICE

VITAMINS

CONSUMERS UNION
OF UNITED STATES
55 Vandam St. New York

Vacuum Cleaners (See page 5)



CONSUMERS UNION *reports-*

VOLUME I NUMBER 8



DECEMBER, 1936

SENATOR COPELAND'S ODD JOBS

CONSUMER eyes have been focused on Senator Royal S. Copeland of New York during the past several years because of his sponsorship of new food, drugs, and cosmetics bills in the last two sessions of Congress. Charged with the provision of legislative protection against misrepresented, adulterated, worthless, and dangerous products, Dr. Copeland did exactly what was to be expected of a patent-medicine man in high political office. He called in the promoters of medical nostrums, some of whom had paid him high fees to push their products over the radio, to tell him how to write his bills. They did; and they were delighted with the results. Only a jurisdictional fight between two Government agencies prevented the passage of Copeland's deceptive bill.

The Senator has promised the nostrum manufacturers that he will introduce a new food, drugs, and cosmetics bill when Congress convenes in January; and he recently called the manufacturers together at the headquarters of the Copeland Service in New York to plan the new legislation. Further light is thrown on the Senator's career by the following editorial which appeared in the *New York Post* of December 14:

"We think the United States Senate should investigate the business activities of Senator Royal S. Copeland's son.

"Royal S. Copeland Jr. was formerly with the Copeland Service, Inc., a consulting service for manufacturers of food and drugs.

"He has now gone into the shipping business under the firm name of Copeland Shipping, Inc., at 11 Broadway.

"Senator Copeland served the food and drug industry in its fight against more stringent food and drug legislation.

"He also served the shipping industry in its fight against reform of subsidy scandals and working conditions at sea.

"We have no reason to doubt Senator Copeland's sincerity, though we disagree with the positions he has taken.

"We have no reason to believe that his son intends to

take advantage of the friendly feelings the shipping interests have for his father, nor have we any reason to believe that Senator Copeland has any interest in his son's business.

"But we think that the son's activities compromise his father and that his father, by permitting them, is injuring the honor and dignity of the United States Senate.

"On the Senate floor Royal S. Copeland Sr. speaks in defense of the shipping interests. On Broadway Royal S. Copeland Jr. solicits their business."

The editorial is much too gentle with Senator Copeland. There may be no evidence of direct financial ties between him and the shippers. But in the case of the nostrum manufacturers, evidence of financial ties was carried by radio into millions of American homes. On the same day that the Senator held the first public hearings on the food and drugs bills, he appeared as a highly paid testimonializer in a broadcast for Fleischmann's Yeast.

For Senator Copeland to continue to sponsor consumer-protective legislation is a disgrace to Congress and a brazen affront to

the American people.

Ronrico—Continued

From the Chicago representative of *People's Press* comes an interesting sidelight on the Ronrico Company. It was J. B. Gosch, vice-president of that company, who threatened to spend a million dollars to jail the heads of Consumers Union for reporting that his rum contained sulfuric acid and manganese. Dr. Herman F. Bundeson, head of the Chicago Department of Health, told *People's Press* that representatives of the company tried to "fix" the Department when it originally stopped the sale of Ronrico Rum in Chicago. According to Dr. Bundeson, the offer of a bribe was withdrawn when the Health Department threatened to throw the rum off the market completely. Yet Gosch speaks freely of a "\$3,500 political squeeze play" in Chicago, and the ban on the sale of Ronrico was lifted. Who got the \$3,500?

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Arthur Kallet, *Director*; D. H. Palmer, *Technical Supervisor*.

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MINERAL OIL NOSE DROPS

DURING 1937 AND THE COMING YEARS many thousands of children will die of pneumonia. The death certificates of hundreds—perhaps thousands—should bear the word, "Murdered."

The killers will not be the ordinary criminals who appear daily in police lineups. They will be men who contribute regularly to the Red Cross and to the Community Chest—and who make their money by selling to unwary mothers a dangerous medicine that causes pneumonia.

It sounds incredible, fantastic; but it is brutally true. The medicine is the familiar and innocent-looking mineral-oil nose drops used for colds—*Mistol*, *Vicks Va-tro-nol*, *Pineoleum*, and dozens of others. For many years medical evidence has been piling up that mineral oil dropped into the noses of children, especially very young children, may be drawn into the lungs. There it collects, causing irritation, inflammation, and chronic pneumonia. The sequel is often acute pneumonia and death.

The Makers Know

All this must be known to the manufacturers. It has been reported not only in the medical journals but even

"Safe for children," the advertisements say; but medical authorities know that mineral-oil drops can cause pneumonia.

in a few daily papers, though without mention of brand names. The public, however, has been kept largely in ignorance of the specific danger.

Ordinarily, when a child dies at home of pneumonia there is no autopsy. It is known that pneumonia caused the death and no effort is made to determine what caused the pneumonia. Only a comparatively few doctors, aware of the danger of oil in the lungs, have looked for cases of oil pneumonia. They have found them—usually after death. The fact that a handful of doctors found many such cases can mean only that in the entire population there must be thousands.

Mineral-oil drops, it is true, are not the only cause of *lipoid* pneumonia, as it is known to doctors. Fats and oils administered by mouth can be equally damaging. Cod-liver oil or mineral oil forced into the child's mouth against his will and causing choking or vomiting can get into the lungs. Even milk-

fat can be responsible. But in these cases it is the ignorance of a mother, or the ignorance or carelessness of a doctor who fails to warn her against these forced feedings, that must be blamed.

Vicks for Infants

The sale of mineral-oil drops, however, is not the work of ignorant men. Vick Chemical Company, for example, prides itself on the statement that "Vick Chemists and Medical Consultants have been studying the problem of colds for years," and every mother is assured that *Va-tro-nol* can be used for infants with "benefit and safety." The president of the company, L. Richardson, adds his personal pledge that "competent physicians have carefully studied these directions and from time to time revised them. To the best of our knowledge and belief, they are in accord with the soundest medical knowledge of the day."

Many years, not days, have passed since sound medical advice first condemned the use of mineral-oil drops for children and warned against their use by adults as well. Physicians were aware of their fatal possibilities as



THESE MEDICINES CONTAIN MINERAL OIL; AVOID THEM!

long ago as 1925. The case against mineral-oil drops was summarized by Dr. Harvey F. Garrison in a paper entitled, "Lipoid Pneumonia in Children," appearing in the *Southern Medical Journal* for April, 1935:

... It has been conclusively shown that small amounts of oils administered by mouth and in the naso pharynx may be aspirated into the trachea, ultimately reach the alveoli, and produce a lipoid pneumonia.

In 1925 Laughlin reported four cases in which he found large quantities of oil in the lungs. Three of his cases were in very young children ...

Pinkerton in 1927 reported six cases. He found mineral oil alone in two cases, milk fat in one, egg yolk in one, mineral oil and cod liver oil in one, and cod liver oil alone in another ...

He concluded that the pathological picture depended upon the length of time the oil had been in the lungs.

In the cases reported only a very few have been diagnosed before death. Rabinovitch and Lederer reported six typical cases, all found at autopsy.

In the 25 cases reported from the Harriet Lane Home by Goodwin, in August this year, only three were recognized clinically before death. Twelve of these children were under six months of age, six between six months and two years, six between two and five years, and the oldest seven years of age. Various oils were responsible for the condition ...

In four of the cases at the Harriet Lane Home, in which the amount of pulmonary involvement was the greatest, a definite history of the installation of liquid petrolatum in the nose, or its ingestion, was obtained.

Many other leading medical journals have reported the danger of min-

Obituary

Hill's Nose Drops is safe for children, as well as for adults. Never harsh, as you will note ... And they can be used freely, with absolute safety.

For infants under two years of age, one or two drops up each nostril is sufficient ... Va-tro-nol can be used as directed with benefit and safety ...

For infants dilute Mistol Drops to half strength with Nujol [a mineral oil—Ed.]. Lay the baby on his back and use the dropper.

Whether used as a spray or with a medicine dropper, Pineoleum is a bland and pleasant preparation, refreshingly fragrant and soothing to the mucous membranes ... With small children it is recommended to use the medicine dropper.

[The above are manufacturers' directions accompanying mineral-oil nose-drops.]

eral-oil drops. The doctors have made no secret of their work. No one can suppose that Standard Oil Company, parent of *Mistol*, and the other manufacturers have somehow failed to learn that their products are dangerous

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for children, and even, in some cases, for adults.

The manufacturers know the whole story and ignore it with calculated deliberation. To them it is a problem of sales, not lives. The children's market is an excellent one. Spending liberally for advertising, they have exploited the market to its fullest. Many parents who do nothing about their own colds run to the drugstore at the child's first sneeze and buy the persuasively advertised nose drops. Some parents, it is true, buy mineral-oil drops on the advice of a physician; for there are still too many doctors who carry on their practice for years, serenely ignorant of the growth of medical knowledge since they received their diplomas.

Nose drops have not even the justification that they will prevent or cure colds. In the great majority of cases they will not even give relief. A sensation of relief may be obtained when ephedrin or menthol is dissolved in the oil, but the relief is temporary and is often followed by more severe congestion. In many cases the injudicious use of nose drops has caused spread of an infection into the sinuses.

The presence of mineral oil as an ingredient is stated either on the label or in a leaflet accompanying each package of these nose drops, commonly sold in drug stores:

Chloretone Inhalant
Macy's Nose Drops
Pineoleum
Rexall Nasal Spray
Silver-Col

Tests made by Consumers Union showed the presence of mineral oil in these preparations:

Campho-Lyptus
Hill's Nose Drops
Mistol
666 Nose Drops
Vicks Va-tro-nol

Continued sale of these products, many of which are widely advertised for the treatment of children's colds, means pneumonia and death for many children who would otherwise suffer nothing worse than a bad cold. Nor is it likely that the sale will be stopped; the use of Vicks products has been soaring during the depression, the company is paying a \$2 dividend, and the prospects for 1937 are excellent.



THEY PROFIT: LOUIS K. LIGGETT, PRESIDENT, UNITED DRUG COMPANY (REXALL NASAL SPRAY), LEFT; AND L. RICHARDSON, PRESIDENT, VICKS CHEMICAL COMPANY.

Kaiden-Keystone

VACUUM CLEANERS

THE NEW HOOVER 150 WITH DIRT Finder headlight, Positive Agitation, automatic rug adjustor, time-to-empty signal, two motor speeds, full streamlining, a "Handy Cleaning Kit" with accessory gadgets for all kinds of cleaning work, and a cellophane wrapper, sells for a little under \$100.

Tests indicate that this *Hoover* does clean effectively, as does the cheaper *Hoover 300* model. It is not as good, however, as the *General Electric AV1*, which lacks most of the "features" of the *Hoover 150*—and sells for about one-third as much.

For those who want ruggedness and long life in an efficient cleaner, and are not concerned about streamlining and gadgets, the *GE* rates as *Best Buy*.

These and a long list of other cleaners have been tested and rated, the ratings taking into account cleaning ability, durability of motor construction, general convenience of the cleaner in use, and various points of design which determine ease of servicing and durability. The machines were also given electrical tests to determine the possibility of their injuring their users through electric shock. All but the *Sears Roebuck Kenmore Model 9800* performed reasonably well on these tests.

Both the *Kenmore* and the *Montgomery Ward Standard* had surprising defects in design, even for low-priced cleaners. The motor of the *Standard* was inaccessible, even for such minor servicing as replacement of the motor contact brushes—the most common service job on vacuum cleaners except, perhaps, for replacement of the fan belt.

Rebuilt Cleaners

Good buys can sometimes be obtained in rebuilt cleaners. Some *Hoover* dealers carry factory-rebuilt models, refinished and with all worn parts replaced, and with a one-year written guarantee. Two such *Hoover*

A good machine can be bought for \$30; housewives who prefer headlights and streamlining pay luxury prices. Salesmen are trained to give convincing demonstrations, and a little ingenuity can make any machine look good.

Specials, Model 700 and Model 105, were included in the test. Model 700 performed satisfactorily, and was reasonably convenient to use, although the bag with it was of the old type which has to be emptied by the small hole through which the dirt goes in. Model 105, however, was a decidedly out-of-date machine, and an ineffective cleaner.

Two reconditioned *Electrolux* cleaners were tested also: one a Swedish-made model and the other made in the United States. The Swedish model lacked sufficient power to rank high in cleaning ability; but the reconditioned American model was slightly more effective even than the newest model *Electrolux*. Since these machines are not factory-rebuilt but only reconditioned by private firms, they should be purchased only from reputable and well established dealers who are willing to give at least a year's guarantee on their workmanship.

The *Electrolux* cleaner is basically different from most other types. The motor and the dirt bag are contained in a case which sits by itself on the floor while the operator slides the cleaning nozzle, attached by a pipe handle and flexible hose, over the carpet. Its construction makes it probably the most convenient cleaner for the use of various accessory attachments for special cleaning tasks. It relies on suction alone for its cleaning, having no revolving brushes or beaters. Nevertheless, it was better than average on the cleaning test.

There have been many arguments

as to the reliability of laboratory tests such as the one *CU* used for comparing the cleaning effectiveness of different vacuum cleaners. The *Hoover Company*, especially, reports tests conducted under "field" conditions—on rugs dirtied in actual use in homes and theaters—which fail to check the results of laboratory tests with artificially imbedded dirt. The advantage of laboratory tests, of course, is that they can be performed under controlled conditions, where possible sources of variation in results can be eliminated. Field tests, unfortunately, frequently fail to check, not only the laboratory tests, but, what is most disconcerting, each other.

The whole problem is a fit subject for a Doctorate thesis for some graduate student in Home Economics or Household Engineering. There needs to be determined, first of all, just what the vacuum cleaner should accomplish—whether it is essential, for the sake of cleanliness and to reduce wear on rugs, to remove completely all kinds of "dirt," or whether some kinds are more important to remove than others. The effect of the different types of cleaners on the life of a rug needs also to be determined.

How to Test

The tests performed for Consumers Union were conducted in the laboratory, with a specially prepared oily dirt, thoroughly worked into the rugs. Each cleaner was tested under precisely the same conditions as every other. Determinations were made both of the total amount of dirt collected by the cleaner in the cleaning of a test rug and the relative amounts in several different time intervals, so that the rating for cleaning effectiveness might take into account both thoroughness and speed of cleaning.

Selling vacuum cleaners is one of the more highly developed sales "arts." The salesman carries with him

"dirt" of various types to illustrate the versatility of his machine: sand to represent the gritty dirt, salt or soda for dust, and kapok to simulate the linty materials which get on the rug surface. Montgomery Ward, lacking direct salesmen, will send you a kit of these materials to let you demonstrate the cleaner for yourself.

In the demonstration, the sand dances in front of the cleaner, the baking soda "boils" and raises a dust cloud, and the kapok comes up clean the first time over. The cleaner is run with the dust bag off, for you to see the quantity of dirt blown through it—an impressive trick, but a comparatively meaningless one, since the efficiency of any cleaner is cut down considerably by the back-pressure produced by the bag. You are invited to clean a rug with your old cleaner, after which the salesman goes over it with the new one, picking up a humiliating quantity of dirt. In your embarrassment it doesn't occur to you that your old cleaner is probably not in the pink of fine adjustment, and that its bag is not as clean as it should be for greatest efficiency, or that it would undoubtedly have picked up more dirt itself if you had gone over the rug a second time with it.

The remarkable fact is, of course, that practically any new cleaner will do all the tricks to perfection. Each make proves, in clear-cut demonstration, to be the best on the market. Every salesman can glibly point to outstanding features which no other machine can offer, regardless of price.

Your Present Cleaner May Do

If you now have a cleaner, before buying a new one make sure that minor repairs and replacements on your present machine are not sufficient to put it in satisfactory operating condition. If the motor is in good shape, or can easily be made so, it will probably be much cheaper to replace the worn revolving brush and extension cord and such other minor parts as may need attention than to invest in a new machine. Do not rely on a salesman to give you impartial advice on this. He makes his living selling new machines, not fixing up old ones. Even the maker's service man may be too much under the influence of the sales department. The number of stores

which sell used and reconditioned cleaners, and the excellent buys often available from them, are convincing evidence of the quantities of machines which are discarded before they are by any means worn out.

Before signing on the dotted line, insist on the opportunity to keep the new cleaner long enough to try it out in your own regular cleaning routine at home. This is the only reasonable test by which you can judge for yourself the desirability of the various special features of which the salesman boast. In the course of such a test, you may discover inconveniences which would not occur to you while the salesman is demonstrating the machine and distracting you with his patter. You can try out for yourself the various accessories for cleaning mattresses, furniture, and curtains, or dusting bookshelves, and estimate the likelihood that, having used them once or twice, you, like so many others, would leave them quietly on the shelf to gather dust of their own.

When Indifference Pays

If a prospective purchaser of a cleaner, particularly some of the higher-priced cleaners, does not appear too eager, salesmen will often find ways of cutting the price. This may be done by special allowances for old cleaners, or for making the purchase by a certain date so that the salesman can "make his quota." A variety of other equally good excuses for cutting the price may be given if the purchaser does not appear ready to sign.

Many cleaners are sold with a can of *Expello* or some other mothproofing agent to be blown into furniture and garments. As pointed out in *CONSUMERS UNION Reports* for June, 1936, mothproofing agents which depend on fumes or vapors to kill the moth larvae are effective only when these vapors are confined in airtight chests or closets. Blowing them into articles not so enclosed will not be effective in killing moths; when confined in an airtight enclosure, the vapors will penetrate all parts of it without special blowing. Frequent thorough cleaning with an efficient vacuum cleaner will, however, dislodge and destroy moth larvae and eggs on the surface of rugs, upholstery, and other materials that

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are subject to destruction by moths.

Gadgets sold with cleaners for use in disinfecting should likewise be considered sheer waste of money. They have no genuine usefulness.

Motor Construction

One of the most difficult points for the consumer to judge in buying a cleaner is its probable durability. This depends primarily on the motor. Most of the cleaners tested had motors mounted in ball-bearings packed with grease. Many of the makers claim that this lubrication is adequate for the life of the cleaner. There is certainly one sense in which this is true: if the lubrication fails and the bearing burns out, that is pretty likely to be the end of the cleaner's life. The General Electric Company is slightly more conservative in its instructions. It claims that the grease-packed bearings will "run for years without further lubrication," but suggests that "it is advisable to take your cleaner to a General Electric service station every two or three years and have the ball bearings examined." To assure maximum life for your cleaner, it should be inspected and its bearings repacked with grease every year or so.

As is pointed out in the listings, in the new *Hoover* cleaners the upper bearing of the motor is not a ball-bearing; the shaft turns in a plain bearing of special molded material supposed to lubricate itself. Only extensive life tests on a considerable number of motors can determine how durable such bearings will be. Without such tests the consumer is entitled to the suspicion that Hoover has cheapened the construction of its cleaners at this point.

In the Montgomery Ward *Standard* cleaner tested, the grease leaked out of the lower motor bearing during the test, a defect which the consumer would be likely to discover only through failure of the motor.

A few of the cheaper cleaners—and one of the more expensive, the *Air-Way*—had motors with plain bearings which require frequent or occasional oiling or greasing. Unless the lubrication of such machines is made a matter of routine, their bearings are likely to be short-lived.

The most frequent servicing job on cleaner motors is the replacement of

the motor contact brushes. On the more old-fashioned cleaners, which have not received beauty treatment by eminent modern designers, the brush holders are usually on the outside of the case which encloses the motor, and brush replacement is a simple task. Such cleaners have the additional virtue that the motor housing has ventilation holes through which one can see inside; hence attention is quickly drawn to arcing—sparks and flashes—which is the first indication that the brushes are not functioning satisfactorily. In cleaners which have a decorative housing covering the motor, such warning flashes cannot be seen. One becomes aware of trouble only when the motor has noticeably lost power, by which time mere replacement of the brushes may no longer correct the trouble.

Brushes and Beaters

The importance of having a revolving brush on a cleaner, and what is the most desirable type of brush, are other points about which there is dispute. Most of the conventional full-size cleaners have a brush of some sort, which is supposed to comb or sweep the rug to remove surface litter while the air drawn in by the blower pulls out the more deeply imbedded dirt. The Hoover Company has placed smooth metal bars on the shaft which carries the brush, to provide "positive agitation." The bars beat the rug as it is held against the nozzle of the cleaner, jarring loose the imbedded dirt. Division of opinion is clear-cut: the Hoover Company, which holds the patents on the metal beater bars, claims that they are one of the principal reasons for the *Hoover's* "superb cleaning performance"; other companies insist that revolving brushes without metal bars beat the rug just as effectively, but at the same time more gently, since the brushes are flexible and therefore less likely to damage the rug.

The *Air-Way* cleaner formerly relied on straight suction for its cleaning, without revolving brush. The current model has added a new nozzle containing a revolving brush with beater bars, essentially similar to those in the *Hoover* except that they are set in rubber holders, which may give them some slight flexibility. The poor

cleaning performance of the *Air-Way* would seem to indicate that beater bars by themselves do not make a good vacuum cleaner. An extra motor is mounted on the new nozzle to drive the brush; this can only add to service troubles.

Suction vs. Sweeping

It seems reasonable to assume, however, that a revolving brush, with or without beater bars, would not only help in picking up surface litter but that its brushing action would help in dislodging dirt from the rug. Cleaners without such a brush will probably have to exert more powerful suction to produce the same cleaning effect.

Whether stronger suction or beating and sweeping is the more destructive to rugs is a matter to be settled by actual tests. It seems more likely, however, that the beating and sweeping would cause the greater wear.

In any revolving-brush machine, the bristles of the brush wear down, and the brush has to be replaced every so often. Most cleaners with a revolving brush have a mechanism by which the brush can be lowered as the bristles wear down, prolonging the useful life of the brush.

Some of the smaller cleaners which have no revolving brush have instead a stationary brush in front of or behind the nozzle. These are of little value in cleaning.



THE HEADLIGHT LIGHTS THE SALESMAN'S WAY.

The Extension Cord

Another cleaner accessory subject to wear is the extension cord. Worn or frayed cords are a serious source of shock and fire hazard, and should be promptly replaced. Most of the cleaners tested have rubber cords; a few of the cords are cotton-covered, which is less desirable than good rubber covering. Durability of cords is considerably increased when they are reinforced at the points where they are most likely to be sharply bent, either by a thickening of the rubber covering or by a coiled-wire reinforcement. To make the cord last longer, avoid getting knots and kinks in it, and do not wind it too tightly around the metal holders on the handle of the cleaner.

On the *Kenmore* cleaner, apparently through oversight, clearance was not left at the base of the handle to permit the usual socket and plug connection in the cord running from the

switch, through the handle, to the motor. On the cleaner tested, the cord had been cut by the sharp edge of the metal handle—the result of careless packing.

To maintain the efficient operation of a cleaner, empty the dust bag frequently. Dust clogs up the pores in the bag, so that air passes out through them less readily. This builds up a back-pressure which reduces the cleaner suction.

Bags should be thoroughly shaken when they are emptied, to dislodge accumulated dust. It is advisable, also, frequently to turn the bag wrong side out and brush it.

The Listings

In the ratings, cleaners are listed in approximate order of their general desirability as purchases, consideration being given both to quality and price. The order will, however, vary for different purchasers, depending on the

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types of cleaning to be done and willingness to pay for the particular convenience features of the different machines.

All of the models tested are listed by Underwriters' Laboratories Re-examination Service as acceptable.

Weight Is Not Important

The weights of the various cleaners are given. It should be remembered in judging cleaners that, while lightweight cleaners are easier to carry up and down stairs, they are not necessarily easier to push while cleaning, and that lightness may have been achieved at the expense of durability of construction.

The prices given are the regular list prices of the machines, without extra cleaning accessories, except in the cases of the *Electrolux* and the *Air-Way*. On some makes lower prices may be obtainable.

Vacuum Cleaners

Best Buys

General Electric Models AV1 and AV3 (General Electric Co., Bridgeport, Conn.). \$29.95 and \$19.95, respectively. Both of these cleaners are adequately powered and durably built. They lack the refinements and convenience features of many of the more expensive machines, such as improvements in bag design to facilitate emptying. Model AV3, although a small cleaner with no revolving brush, ranked high in cleaning ability. Weight, 11 lb. Model AV1 has a revolving brush and a more powerful motor. It ranked highest in cleaning ability of all machines tested. Slight electric shock hazard under conditions of high humidity. Weight, 13½ lb.

Also Acceptable

(In estimated order of merit)

Premier 37 (Electric Vacuum Cleaner Co., Cleveland, Ohio). \$34.50. Very similar to *General Electric AV1*, but with less powerful motor and

somewhat lower cleaning ability. Has minor convenience improvements. Weight, 15 lb.

Electrolux Reconditioned Models. Such models, reconditioned by private dealers, are available in many cities. Where they are obtainable for less than \$40.00 from reliable dealers who will give a year's guarantee against defects, they may rank as *Best Buys*. Both an American- and a Swedish-made machine were tested, purchased from the National Vacuum Cleaner Supply Co., Inc., 27 E. 14 St., NYC. The American-made model had a more powerful motor and appreciably better cleaning ability than the Swedish. Reconditioned models should not be purchased from unreliable dealers or without a satisfactory written guarantee.

Electrolux (Electrolux, Inc., NYC). \$69.75 (advertised installment price \$77.50), including accessory equipment for special cleaning tasks. The *Electrolux* is not sold without this auxiliary equipment, which is particularly convenient to use with it because of its special design. Excel-

lent motor, highest in power of any machine tested. Above average in cleaning ability. Has no revolving brush. Bag especially convenient to empty. Total weight, 16½ lb.; but this cleaner is not comparable with the others on the basis of weight because of its fundamentally different design.

Universal Model E 395 (Landers, Frary, and Clark, New Britain, Conn.). \$34.95. Has revolving brush. About average in cleaning ability. Slight electric shock hazard under conditions of high humidity. Weight, 15 lb.

Hamilton Beach Model 8 (Hamilton Beach Co., Racine, Wis.). \$34.75. Has revolving brush. About average in cleaning ability. Weight, 14 lb.

Hoover Special Factory Rebuilt Model 700 (The Hoover Co., North Canton, Ohio). \$39.75. A well built machine in excellent condition; rated high in cleaning ability. Has revolving brush with "positive agitation" beaters. Bag less convenient to empty than on new *Hoover* models, and lacks some other convenience features. Weight, 18 lb.

Hoover Model 300. \$53.50. Has headlight, revolving brush with "positive agitation" beaters, convenient bag design. Ranked high in cleaning ability. Motor has one ball-bearing and one "self-lubricating" type plain bearing, a construction judged likely to reduce its durability. Weight, 16 lb.

Hoover Model 150. \$81.50. A *de luxe* model, not strictly comparable with other machines tested: "streamlined"; with headlight, "bag full" indicator, automatic adjustment for height of carpet, two motor speeds for heavy and light cleaning, especially convenient dust-bag design, etc.—for all of which an excessive price is charged. Has revolving brush with "positive agitation" beaters. Ranked high in cleaning ability. Motor higher powered than that in Model 300, but with same type of bearings. Weight, 16 lb.

Not Acceptable

Eureka Model G (Eureka Vacuum Cleaner Co., Detroit). \$59.50. Has

revolving brush. Well built motor, with two speeds. Below average in cleaning ability.

Ward's Standard Cat. No.—1456 (Montgomery Ward & Co.). \$26.50 plus postage. Below average in cleaning ability. Motor very inaccessible for even minor servicing, such as replacing brushes. Ball-bearing motor; in cleaner tested, grease had leaked from lower bearing. Has revolving brush. Judged less convenient in use than most of other machines tested. Weight, 19 lb.

Kenmore Cat. No.—9800 (Sears, Roebuck and Co.). \$23.50 plus postage. Cleaning ability about average. Electric insulation failed in high voltage test. Motor has plain bearings, requiring frequent oiling. Inferior in construction on several points to other machines tested. Convenience in use judged below average.

Universal Model E95A (Landers, Frary, and Clark). \$16.95. A small, light cleaner, without revolving brush; compact in design. Cleaning ability very poor. Motor has one plain bearing, requiring oiling. Judged inconvenient on several points.

Hoover Special Factory Rebuilt Model 105. \$19.95. Cleaning ability very poor. Has revolving brush, but not "positive-agitation" beaters of the newer Hoover models. Lacks many convenience features of newer machines. Motor has plain bearings, requiring frequent oiling.

Air-Way (Air-Way Electric Appliance Corp.). \$80.55 (advertised installment price \$89.50), including accessory equipment for special cleaning tasks. Cleaning ability below average. Has separate motors for suction and for revolving brush; both have plain bearings, requiring greasing, and were judged inferior in quality to motors of most machines tested.

ELECTRIC IRONS

BECAUSE NON-AUTOMATIC IRONS ARE generally unsatisfactory in comparison with automatic, and present a serious fire hazard under conditions of household use, tests of irons were limited to the automatic type. Automatic irons provide control of the temperature of the iron by means of a thermostat which shuts off the electric current when the iron reaches a certain maximum temperature, and turns it on again after the temperature has dropped a certain amount. In most cases the maximum can be adjusted to allow for the different temperatures required for different fabrics. In all but one of the irons, the operating temperature is controlled by a knob which is set by hand.

All of the models tested were designed for use on 110-volt alternating current. To prevent the excessive sparking which occurs when an ordinary thermostat operates on direct current, many manufacturers provide

Four automatic irons rate as "best buys" in a test of 15 models. Several makes expose the user to the danger of electric shock.

irons with a special quick-acting thermostat for direct current. The direct-current irons may also be used on a-c, but the use of a-c irons on d-c will result in burnt thermostat contacts and consequent short life of the thermostat.

Most makes of automatic irons are available in 1000-watt and 800-watt capacities. The 1000-watt size is preferable for those who do much ironing, since it is faster, providing continuous flow of heat sufficient for heavy ironing loads such as damp sheets and linens. The smaller sizes do not supply heat rapidly enough and consequently cool too much under heavy load. For light work or intermittent

ironing where much of the operator's time is taken up with arranging pieces, a smaller iron is, however, satisfactory.

Two general types of heating elements are used in electric irons. In the first and older type of construction, the heating element is a strip of resistance wire wound on a sheet of mica placed between other sheets of mica for insulation, and the whole sandwiched between the sole plate of the iron and a cast-iron "pressure plate" which is bolted down to the sole plate. With this arrangement, considerable heat is radiated to the upper surface and the handle of the iron. In the second type of construction, the resistance wire of the element, coated with an insulating material and in some cases covered with a sheet-metal casing, is imbedded in the metal of the sole plate itself. With this type, there is less heat loss.

Several irons—for example, the *Lady Dover* and the *Montgomery Ward* No. 5113—have handles which are open at the front end. These appear to offer some additional convenience in ironing such things as sleeves.

General Electric irons are equipped with a thumb rest and button nooks. The thumb rest at the front of the handle may have some slight value, but it does not merit much consideration in the selection of an electric iron. The button nooks are slots cut into each side of the sole plate about an inch from the point of the iron. They are supposed to facilitate ironing around buttons, but some women who have used irons with button nooks report that they require extra attention for proper results, and so complicate the ironing process.

Two of the irons, the *General Electric* and the *Dominion*, had aluminum or aluminum alloy sole plates. Both of these maintained their temperature unusually well while in use, probably because aluminum is a much better heat conductor than cast iron. An aluminum surface is much more easily scratched and roughened than an iron or chromium-plated surface, however.

Several of the irons had their appliance cords permanently attached. This is not objectionable provided the temperature control knob has an "off" position. If the cord outlet is at one side of the back of the iron, it interferes less with the wrist while one is ironing and the iron is likely to be more stable when tipped up on its heel rest. All but two of the irons tested had the conventional heel rest on which the iron may be tipped back when not in use or while it is heating. In order to increase the "streamlining" effect of the design, some of these heel rests are made so long and so low that they may interfere with the ironing.

One model of the *Proctor* iron has a special "snap stand" which may be lowered under the iron by pressure on a button in the handle. When the iron is lifted a spring returns the two metal legs on which the iron rests to their positions above and parallel to the shell of the iron.

Six pounds seems to be a more-or-less standard weight for an electric iron, but most models may be obtained in lighter weights as well. If an iron

has insufficient heat, the operator usually tries to compensate for the lack by bearing down heavily on the iron. In the case of an iron with an adequate heat supply, pressure becomes less important in the ironing operation, and a lighter iron should be as good as a heavier one. Some tests have been made of the energy required for ironing with irons of different weights, but the available evidence is not conclusively in favor of either the light

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weight or the heavy. Which is desirable becomes largely a matter of individual preference.

The tests covered electric insulation—leakage and breakdown tests—and performance, including temperature at different ironing rates, efficiency at different ironing rates, and variation of temperature over the sole plate. Those irons showing serious shock hazard on the first electric insulation test were not given the performance tests.

Electric Irons

Best Buys

Proctor Model 940 (Proctor and Schwartz Electric Co., Philadelphia). \$6.95. 5 lb. 1000 watts. Handle is cork and offers excellent protection against heat. Attached cord, at side of iron. Temperature drops only slightly even under heavy ironing loads (damp sheets or other large pieces).

The maker states that Model 940 has been superseded by Model 942 with only minor changes. Price of 942, \$7.95; \$1.00 trade-in allowance for an old iron makes the price \$6.95.

Proctor Model 930. \$7.95. Has a special "Magic Stand" which can be lowered by a button on the handle. It is otherwise the same as Model 940.

The maker states that Model 930 has been superseded by Model 931 with only minor changes. Price of 931, \$8.95; \$1.00 trade-in allowance for an old iron makes the price \$7.95.

Heatmaster Cat. No. -356* (Sears, Roebuck and Co.). \$3.49 plus postage. 6 lb. 700 watts. Cork handle. Temperature drops somewhat more than average while iron is in use. Low capacity, only 700 watts. It is a best buy except for heavy ironing work.

Hotpoint Moderne Automatic Model 149 F 83. (Model 159 F 83 is the same iron.) (General Electric Co., Bridgeport, Conn.). \$8.95. 3½ lb. 1000 watts. Cool, molded handle; has so-called thumb rest which may add slightly to convenience. Aluminum sole plate can be easily marred. Cord is permanently attached to the iron. Thermostat knob has an "off" position. Temperature drops very little, even under high load.

* The first numeral and the letter which form part of complete mail-order catalog designations (for example, 4-L-5713) are here omitted, because they vary with the branch issuing the catalog and the date of issue. The last part of the number as given here is sufficient to identify the product.

Also Acceptable

(In estimated order of merit)

Sunbeam Ironmaster Cat. No. A 1 (Chicago Flexible Shaft Co., Chicago). \$7.95. 3¾ lb. 1000 watts. Handle fairly satisfactory. Temperature-adjusting device built into the top of handle. Point is too cool in comparison with the center of sole plate.

Westinghouse Cat. No. LPC-4 (Westinghouse Electric and Mfg. Co., Mansfield, Ohio). \$8.95. 4 lb. Molded handle, no metal supports. Permanently attached cord; cord

guard of rubber, better than spring. Thermostat has an "off" position; thermostat dial is difficult to read. Operating characteristics above average. 1000 watts.

Lady Dover Cat. No. 284 (The Dover Mfg. Co., Dover, Ohio). \$7.95. 4½ lb. 1000 watts. Handle open at front end—has some advantages but may seem awkward when first used. Maintains heat fairly well under heavy ironing loads.

American Beauty No. 45-AB (American Electrical Heater Co., Detroit). \$8.95 including American Beauty Cord Support. 4½ lb. 1000 watts. Has smaller sole plate area but more even heat distribution over the sole plate than any other iron tested. Cord permanently attached. Temperature control has "off" position.

Dominion Style 5110 (Dominion Electrical Mfg. Co., Mansfield, Ohio; distributed by Montgomery Ward & Co. Current MW Cat. No. 86-C-5110). \$3.75 plus postage. 3½ lb. 1000 watts. Handle well shaped, giving good protection from hot metal. Temperature knob somewhat too close to the handle. Aluminum sole plate can be easily marred. Temperature drops very little under heavy ironing loads. Efficiency is low, however, for heavy ironing at high temperatures, which means loss of heat upward and consequent discomfort. Slight shock hazard indicated by tests. In sample tested low heat was too high for fabrics such as Celanese, Acele, and Seraceta.

Universal Serial No. E 7133 B (Landers, Frary, and Clark, New Britain, Conn.). \$6.95. 4 lb. 1000 watts. Handle believed not to be as convenient to hold as that on other acceptable irons. A small-size iron. Will not maintain high heat for heavy ironing, but is efficient, and should be satisfactory for light-duty or slow ironing.

Not Acceptable

All irons not having thermostats to control operating temperatures—because of fire hazard.

Magic Maid Model 707 (The Fitzgerald Mfg. Co., Torrington, Conn.). \$6.60. 4 lb. 1000 watts. Wood handle with insufficient clearance for large hand and poor protection against contact with hot metal end support. Fails to maintain satisfactory heat under heavy ironing loads. Possible shock hazard. This model has been discontinued by the manufacturer, but is still being sold by some retailers.

The following electric irons are rated not acceptable; since all showed excessive shock hazard, which would alone make them un-



THE CORD-LESS-MATIC GETTING COLD.

The art department created a thing of beauty, but an engineering flop.

desirable, none was given full performance tests.

Brannon Cord-Less-Matic Cat. No. 6105-1 (Brannon, Inc., Detroit). \$8.95. 6 lb. 1320 watts. The makers of this iron attempt to eliminate the usual cord and its attendant inconvenience by the use of a special stand. Two contacts on the stand are connected to the current supply when the iron is placed on the stand in such a way as to close a switch. Current is then fed to the iron through contacts on the bottom of the iron. The iron can easily be so placed on the stand as to close the switch while the sole plate is resting on one of the contact buttons, thus bringing the full voltage into the outside parts of the iron and the stand. This condition is one of extreme shock hazard. The iron has a very large ironing surface, but extremely poor heat distribution,

the entire outside edge being much cooler than the center. Since the iron receives no current when off the stand, one must stop ironing frequently to allow it to heat up again—a more serious inconvenience than a dragging cord.

Heatmaster De Luxe Cat. No. -354 (Sears, Roebuck and Co., spring-summer, 1936 catalog. Not listed in current catalog). \$5.45 plus postage. 6½ lb. 1000 watts. Electric insulation broke down under three separate conditions. Also showed high leakage currents.

Kwickway Model K-48 (The Kwickway Co., St. Louis). \$3.95. 6 lb. 800 watts. Excessive shock hazard.

Ward's Supreme Quality Cat. No. -5113 (Montgomery Ward & Co.). \$3.95 plus postage. 6 lb. 800 watts. Serious electric shock hazard; electric insulation failed under several conditions of test.

FOUNTAIN PENS

Good, Inexpensive Ones Are Rare

BRIGHT TRIMMINGS AND A UNIQUE feature or two sell fountain pens as well as automobiles. There is little about the old-fashioned lever-type fountain pen which can be exploited by the advertisers; hence we are introduced periodically to wonderful new features: sacless pens, plunger pens, combination plunger pens with sacs, replaceable-steel-point pens, and now pens to be loaded with ink tablets which will produce enough ink for a year's writing—sufficient, according to a Camel pen ad, "to write another Anthony Adverse in longhand."

Most people have had the experience of purchasing a new, recently "invented" fountain pen which had to be cast aside after a few weeks because it dripped ink, or scratched, or just wouldn't write. In spite of previous sad experiences, one who does much writing is usually ready to try anything new that promises relief from fountain-pen troubles. Unfortunately, a good, dependable pen is much more difficult to find than is commonly supposed.

Of all the recent innovations in fountain-pen design, few, if any, have improved writing quality or durability. A good pen is still one with a simple but reliable ink-filling mechanism, a dependable "feed," a smooth, durable writing-point, and an adequate ink capacity without excessive flow of ink.

The writing qualities and serviceability of a pen do not depend on its price. A pen costing \$2.50 may, in fact, actually be superior in all essential respects to one costing \$10.00. The factors which materially affect the manufacturing cost of a pen are: (1) the amount of gold (and the quality of the iridium) in the point, (2) the type of material of which the barrel and cap are made, (3) the amount of gold in any trimmings, and (4) workmanship.

Price and beauty are no guarantee of satisfactory service; some very expensive pens are poor, while some cheaper ones are good. Most innovations in design are of little value.

The cost of the gold point (18 to 40 cents, approximately) is the major factor in the manufacturing cost of a pen. The cost of assembly may, with painstaking, skilled workmanship, run as high as 15 cents, though many pens are practically thrown together at an assembly cost of a cent or less. The total manufacturing cost of a superior pen, including trimmings, should be no more than 75 cents (retail selling price, \$5.00 or more) compared with 25 or 30 cents (retail selling price, \$1.00 to \$2.00 or more) for a cheap pen. If one is not concerned with a fancy barrel (which may cost the maker 5 or 10 cents more than a black barrel) or gold trimmings, he should not pay more than about \$3.00 or \$3.50 for a pen. Any amount above this goes for decoration, advertising costs, and excess profits.

The Point

Pen points are usually made of 12K or 14K gold, though some makers use 10K. The 10K gold is brittle, and often splits and cracks. The gold content is usually stamped on the point. Points advertised as solid gold but not stamped are usually 10K or 12K. Gold-plated points usually have a steel or brass base.

Gold points are tipped with iridium or hard alloy metals to provide a durable writing-tip. With ordinary use, good iridium tips could stand a lifetime's wear. Inferior tip materials wear off, and the point quickly begins to scratch.

Fountain pens such as the *Esterbrook*, equipped with steel points, are the least satisfactory. They are uneconomical if they cost more than 15 or 20 cents. Although most steel points are made of stainless steel and are sold as non-corrosive, they all corrode. Ink does not feed as well with a stainless-steel point as with a gold one, because stainless steel has a "film" which resists the flow of ink even when the point is new. Added to this, the corrosion of the steel quickly stops the flow of ink and makes the pen worthless. If the ink used happens to have a high acid-content, corrosion may be very rapid. An attempt is made to solve the corrosion problem in the *Esterbrook* by the provision of replacement points selling for 25 cents each. The life of the points is so short, however, that in the long run an *Esterbrook* is far more costly—and far less satisfactory—than a \$3.00 pen with a good gold point.

For a pen to operate properly, it is essential that the point fit closely against the hard-rubber feed. A good point properly "set" should write smoothly, the two legs of the point should not cross or spread apart, and there should be a minimum of leaking.

To Teachers and Educational Directors: A six-page mimeographed study outline based on the November Reports is now ready. Hereafter, one will be prepared every month. It is intended for study groups and classes in consumer problems, economics, home economics, civics, and general science. Send us a card, if you would like to receive this outline—free to CU members who are teachers or group leaders.

Satisfactory feeding of the ink also depends upon the relationship between the ink capacity of the pen, the width and the depth of the ink channel in the feed, and the distance from the end of the ink channel to the tip of the point. Minor adjustments are of the utmost importance. Many of the cheaply constructed pens are assembled practically without adjustment. This is one phase of the manufacturing process where skilled workmanship is absolutely essential.

The material now most widely used for barrels and caps is celluloid. Some parts, such as the "section" and the feed, are made of hard rubber. In some pens the section is made of celluloid or is simply a continuation of the celluloid barrel. This is not good construction, because celluloid shrinks, tightening around the pen point and making its removal almost impossible.

The Inner Cap

The cap of a pen should have an inner cap fitting tightly against the shoulders of the section when the cap is screwed down over the point. The closing of the pen against a good inner cap will keep a certain amount of moist ink on the point, assuring instant feeding of the ink when one starts to write. When the pen is in use, the cap should fit snugly on the end of the barrel. Although this seems a trivial detail, it is annoying to have the cap drop off when one is writing.

Several types of filling devices are now in common use. The most common type is a sac filler operated by a lever on the side of the barrel. Other types are: the so-called "sacless" pens, which have a small sac at the end of the barrel; the inverted-sac type; and the plunger type. In all types the filling is dependent upon the creation of a partial vacuum in the sac or barrel to draw in the ink. All connections and joints should, of course, be airtight. Sacs should be glued to the section. (In cheaply made pens, sacs are held on only by their own elasticity.) Plunger-type pens are more apt to leak air, because seams work open and the plunger-packing deteriorates where it comes in contact with the ink.

The quality of the rubber in the sac is very important. Good, strong rubber sacs fill more quickly than those with thin walls. Poor-grade rubber

sacs lose their resilience quickly and do not fill completely. Poor rubber sticks after a short time and does not fill at all.

Large ink capacity is important only to those who do much writing. A capacity of 1.5 cubic centimeters (28 cubic centimeters equal 1 fluid ounce) or even less is sufficient for persons who do an average amount of writing. Many large pens hold very little ink. The sacs of some pens are fairly large but fill only partially because the filling device is improperly designed. The *Faber \$1.00* pen, for example, which has a sac capacity of 1.3 cubic centimeters, will fill only to .9 cubic centimeter. Almost all pens begin to flood or leak badly when the ink

reaches a low level. This is true of good, well made pens as well as of cheap ones. As a general rule, a pen with large ink capacity has a high flooding-point; that is, it begins to leak while a considerable amount of ink is still in the pen. All pens should be refilled frequently enough to keep the ink at a fairly high level.

The *Camel* pen represents an attempt to make a pen which will be independent of liquid ink supply. Compressed ink tablets are placed in the pen, and for some time thereafter it is supposed to be refilled with water which dissolves the tablets. The sac must be primed with some loose ink powder because of the time required to dissolve the tablets. This type of pen would have obvious advantages if it worked. Serious defects, however, make it practically useless as a writing-instrument. Immediately after the pen is filled with water, the ink is very light, gradually becoming darker. While the ink is light, the pen leaks excessively; but later, when more ink is dissolved, it clogs. When the pen is not in use, an excess of powder is dissolved and the ink feeds with difficulty, or not at all.

Stylographic pens, such as the *Ink-o-graph*, are not satisfactory for ordinary writing. The writing-point consists of a tiny tube through which a rod protrudes. In order to feed ink, the rod must have enough play to allow the ink to pass. This rod or pin moves or wobbles excessively and creates an unsteady feeling while one is writing. The flow of ink is very uneven, and the ink quickly clogs if it contains a slight amount of sediment.

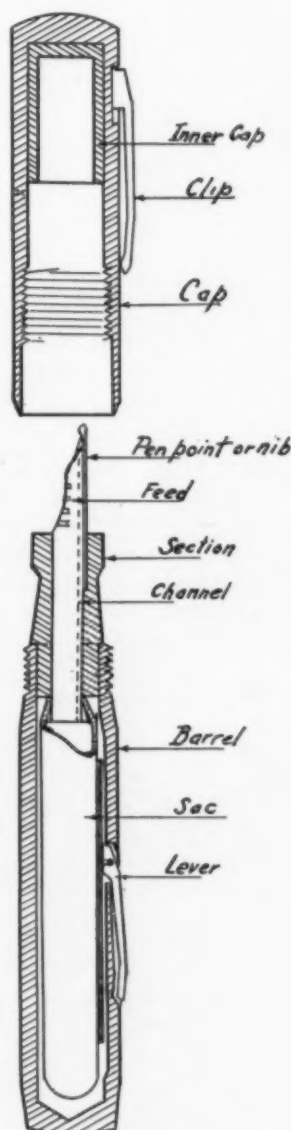
The pen-pencil combination in one instrument is of little value. It is satisfactory neither as a pen nor as a pencil; the ink capacity is very small, and the storage space for lead is inadequate.

Choosing a Pen

1. Select a size which fits the hand easily; a pen which is too large and heavy adds to the effort of writing, while one that is too small cramps the hand.

2. Select a pen point which writes smoothly with an even flow of ink.

3. Try the pen point on paper without ink. The point should not scratch.



THE PARTS OF A TYPICAL PEN.

4. Test for even feeding: fill the pen and then dry all the ink on the point and the feed with a blotter; write rapidly for a time on ordinary soft writing-paper. The pen should write easily with no difficulty in starting and no interruption of ink flow.

5. Examine the closeness of contact between the point and the feed by trying to insert a piece of thin paper between the point and the feed. The paper should not go in.

6. Unscrew the cap and examine to see that it has an inner cap. Make sure that this inner cap screws down tightly onto the shoulders of the section (end of pen next to point). The cap should screw on easily

without much friction and should not jump threads.

7. Unscrew the cap and place it on the end of the barrel; see that it fits snugly and will stay in place during any amount of writing.

8. The lever of the ink-filling device in a sac-type pen should be even with the surface of the barrel, easily accessible, and easy to operate.

It is a good practice when the ink has dried in the pen or when the type or brand of ink is changed, to flush the pen with cold water and clean the point off carefully until all traces of old ink disappear. Do not fill a pen with different kinds of ink without thorough washing between fillings, because different inks interact chemically.

Fountain Pens

Best Buys

Sheaffer Wasp (W. A. Sheaffer Pen Co., Fort Madison, Iowa). \$1.95. Gold point. Side-lever type. Ink capacity, 1.5 cc. Point not as good as *Waterman's Ideal*, and showed

some variation in setting, but otherwise very well constructed. A good buy at the price.

CD Cat. No. 102SA51 (Cooperative Distributors, Inc., 30 Irving Place, NYC). \$1.85 plus postage. Gold point. Side-lever type. Ink capacity, 1.5 cc. Appears to be identical with the \$1.95 *Sheaffer*.

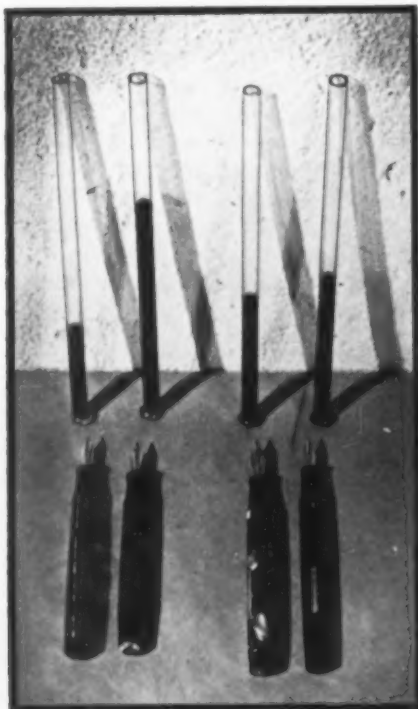
Waterman's Ideal No. 3 (L. E. Waterman Co., 191 Broadway, NYC). \$3.00. Gold point. Exceptionally smooth-writing. Side-lever type. Ink capacity, 1.6 cc. This pen is well finished and shows good construction throughout.

Also Acceptable

Sears' Cat. No.—5713 *: *Webster* (Sears, Roebuck and Co.). \$2.39 plus postage. 14K gold point. End-lever type. Ink capacity, 1.3 cc. Point somewhat rough. Better than average construction throughout.

Wahl Eversharp 45 K (The Wahl Co., Chicago). \$3.50. 14K gold point.

* The first numeral and the letter which form part of complete mail-order catalog designations (for example, 4-L-5713) are here omitted, because they vary with the branch issuing the catalog and the date of issue. The last part of the number as given here is sufficient to identify the particular product.



SIZE IS NO GAUGE OF INK CAPACITY. The tubes show the amount of ink each pen holds. Left to right: Ward's, 98c; Parker, \$5; Waterman, \$5; Waterman, \$3.

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Well made; smooth-writing. One-stroke plunger type. Ink capacity, 2.3 cc. Although of high ink capacity, danger of leaking has been reduced by special feed device.

Waterman's Ideal No. 94 (L. E. Waterman Co., 191 Broadway, NYC). \$5.00. Gold point. Writes smoothly. Side-lever type. Ink capacity, 1.3 cc. Well constructed throughout.

Sheaffer (W. A. Sheaffer Pen Co., Fort Madison, Iowa). \$5.00. 14K gold point. Side-lever type. Ink capacity, 1.8 cc. Good construction throughout.

Parker (Parker Pen Co., Janesville, Wis.). \$5.00. Plunger-inverted sac-type. Ink capacity, 2.5 cc. Gold point. Well made and writes smoothly. Slight tendency to leak. Well constructed otherwise.

Sears' Cat. No. 4 L 5703: Diamond Medal (Sears, Roebuck and Co. Not listed in current catalog). \$3.95 plus postage. 14K gold point, fairly smooth. End-lever type. Ink capacity, 1.1 cc.

Fifth Avenue Pen (F. W. Woolworth Co., NYC). 20c. Gold-plated steel point. Side-lever type. Ink capacity, 1.1 cc. Examine pen for inner cap; some do not have this feature. Cap fits barrel very loosely. Sac not glued to section. Represents a fair value for the low price. Probably satisfactory for school children and those who lose pens frequently.

Supreme (F. W. Woolworth Co., NYC). 20c. Gold-plated steel point. Side-lever type. Ink capacity low, .8 cc. Fair value for price.

Kreko (S. H. Kress Co., NYC). 20c. Gold-plated steel point. Ink capacity, .8 cc. Side-lever type. Inner cap absent on some models. Good quality sac but not glued to section. Represents fair value for price.

Not Acceptable

Chilton 16718 (Chilton Pen Co., Long Island City, N.Y.). \$3.00. Medium-quality 14K gold point. Combination plunger with sac type. Ink capacity, 1.9 cc. Feeding uneven. Point not well adjusted.

Conklin (Conklin Pen Co., Toledo, Ohio). \$5.00. 14K gold point. Plunger type, screw operated. Ink capacity, 1.5 cc. Fitting of point

poor. Ink flow irregular. Tendency to leak. Cap fits barrel poorly.

Eberhard Faber (Eberhard Faber Pencil Co., Brooklyn, N.Y.). \$1.00. 10K gold point. Side-lever type. Ink capacity, .9 cc. Writing surface of point not durable; poor adjustment. Poor workmanship throughout.

Ward's Cat. No. 845 B 5205 (Montgomery Ward & Co. Not listed in current catalog). 98c plus postage. 14K gold point. Side-lever type. Ink capacity, 1.1 cc. Writing-point not durable and very rough. Sac not glued to section.

Ward's Cat. No. 845 B 6485 (Montgomery Ward & Co. Not listed in current catalog). \$1.98 plus postage. 14K gold point. Plunger type. Ink capacity, 1.8 cc. Some tendency to leak. Cap not well fitted to barrel. Poor workmanship.

Sears' Cat. No. 3 L 7709: Ambassador (Sears, Roebuck and Co. Not listed in current catalog). 59c. plus postage. Gold-plated steel point. Finger-operated sac type. Ink capacity, 2.7 cc. No inner cap. Has tendency to leak.

Ward's Cat. No.—5180: Vis-O-Matic (Montgomery Ward & Co. Apparently same pen as *Vis-O-Pen*, Cat. No.—5190, fall-winter, 1936 catalog). \$1.29 plus postage. Gold-plated steel point. Plunger type. Ink capacity, 2 cc. Point not durable. Bad tendency to leak. Cap fits poorly.

Esterbrook (Esterbrook Steel Pen Mfg. Co., Camden, N.J.). \$1.00 and \$1.50 models. Stainless steel point. Side-lever type. Ink capacity: \$1.00 model, .9 cc; \$1.50 model, 1 cc. Irregular feeding with tendency to leak. Steel point of poorer quality

than gold-plated points on the *Woolworth* 20c pen. Cap fits only fairly well.

Camel (Camel Pen Co., Orange, N.J.). \$3.50 and \$5.00 models. 14K gold point. End-lever type. Irregular feeding. When pen is first filled with water ink is very light; later it becomes too concentrated and may clog the pen. Well constructed otherwise.

Inkograph (Inkograph Co., Inc., NYC). \$1.39. Tubular point. Side-lever type. Ink capacity, 2 cc. Type of point construction not recommended for ordinary writing purposes. Ink flow irregular. Pen hard to keep clean.

Kreko Pen-Pencil Combination (S. H. Kress Co., NYC). 25c. Gold-plated steel point. Side-lever type. Low ink capacity, .5 cc. No inner cap. Cap fits barrel very poorly.

WOOLEN BLANKETS

BECAUSE A BLANKET IS 100 PERCENT wool it is not necessarily a good blanket. Some all-wool blankets provide excellent warmth; others don't. Some are strong and will stand up under years of normal use; others are so poorly made they pull apart in the first laundering, or even before.

Most blankets sold as part-wool contain only insignificant amounts of wool, often only one or two percent. Tests of eight blankets sold as all-wool, however, showed that all were made entirely of wool fibers.

Just as most consumers think that the seal of the General Electric Company on an electric appliance is a guarantee of merit, many would consider the name of the American Woolen Company on a blanket an assurance of good quality. The tests again show, however, the hazard of reliance on a manufacturer's name—two blankets made by the American Woolen Company were the poorest of all tested.

The blankets included in the test were examined for fiber content, tensile strength (resistance to pulling-apart), size, shrinkage, color fastness,

All-wool blankets are not always good blankets. Strength and nap are important factors in determining value.

and heat-insulating quality. The bindings also were examined for fiber content. All of the blankets showed good color fastness in laundering tests. Most of the blankets were larger than indicated on the labels. With only one exception, they did not show excessive shrinkage in laundering.

Tensile Strength

The blankets differed from each other more in tensile strength than in any other factor. Tensile strength is important because of the strain placed on a blanket both in normal use and in laundering. Because different kinds of threads and different numbers of threads per inch may be used in the lengthwise direction (warp) of the blanket than in the crosswise (filling), it is necessary to know the tensile strength in both directions.

A blanket should be able to resist a pull of at least 30 pounds per inch in the warp and at least 20 pounds in

the filling if it is to give satisfactory service. One of the American Woolen Company blankets, the *Sylvania*, was found to have a tensile strength in the filling of only 8 pounds per inch. The best blanket tested (*El Dorado*, made by the California Wool Growers Association) had a tensile strength of 64 pounds in the warp and 53 pounds in the filling. The strength depends on the quality of the wool fibers used, the manner in which the fibers are made into threads and the number of threads per inch of blanket. In general, longer fibers make stronger threads, and a tightly woven blanket is likely to be stronger than a loosely woven one.

The heat-insulating properties of a blanket depend largely on the napping (the process of brushing up the surface fibers to produce a fuzzy surface, or nap). If too many fibers are brushed up, however, the blanket will be weakened. An excessively napped blanket is therefore undesirable.

The weight of the blanket is important. Other things being equal, if a blanket of a certain size weighs more than another of the same size, it con-

tains more wool and is likely to provide greater warmth and be more durable. On the other hand, a heavy, tightly woven, felted (poorly napped, smooth-surfaced) blanket may be no warmer than a well made light one.

If bindings are poor, they will need replacement long before the blanket wears out. Cotton sateen is more durable than silk, but its appearance is not as good, and it may not hold its color well. None of the blankets tested had cotton bindings, all of the bindings being silk, silk and rayon, or rayon.

When purchasing a blanket, look on the label for definite information about its construction. The American Home Economics Association recommends that the labels carry the following information:

Size in inches.

Percentages of wool and cotton.

Tensile strength of warp and filling.

Weight in ounces per square yard.

When Buying Blankets

1. One should be sure to get a blanket which is large enough. Short blankets are uncomfortable and are subject to greater wear than larger ones. Standard beds are 74 inches long and a blanket should have a length of not less than 80 inches before laundering. With proper laundering a well made blanket should not shrink more than three or four inches.
2. Do not buy a part-wool blanket unless the percentage of wool is declared on the label and unless the wool content is at least 25 per cent. There is no evidence that the presence of only a few percent of wool adds to the warmth of a blanket. As it is not mandatory that a wool blanket carry a label declaring the wool content, one should select only those which carry such a label. It has been generally agreed in the trade that if a blanket is labeled, it shall indicate the wool content according to the following rules: (a) "No finished blanket containing less than 5 per cent wool shall carry the word 'Wool' in any form"; (b) "Blankets labeled with the

word 'Wool' in any form and containing: between 5 and 25 per cent wool shall be labeled 'Part Wool, not less than 5 per cent wool'; more than 25 per cent wool shall be labeled with the guaranteed (minimum) wool content in percentage. Above 98 per cent wool shall be labeled 'All Wool.'"

3. As already stated, the tensile strength should be not less than 30 pounds per inch in the warp and 20 pounds in the filling.



A GOOD BLANKET HAS A STRONG NAP.

4. The weight of the blankets in this test rated as *Best Buys* and *Also Acceptable* varied from 13.6 ounces per square yard to 15.3 ounces per square yard. A weight much under 12 ounces per square yard is undesirable unless the blanket is extremely well made.
5. The purchaser can easily test for excessive napping. Try to lift the blanket by a pinch of the nap held between the thumb and forefinger. If the blanket is not over-napped and the fibers are closely held, the whole blanket can be picked up in this way. If, however, the fibers pull out easily, they were too short to begin with, or the blanket was over-napped, or both. A blanket with very heavy napping may not be over-

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napped, while one with little napping may be.

6. Examine also for thin spots in the blanket. Hold it up to the light, and if the blanket does not appear fairly uniform, it should be rejected.
7. Pull aside the nap and examine the tightness of the weave. It has already been pointed out that a tightly woven blanket is likely to have greater strength than a loosely woven blanket.

Reasonable daily care of blankets can add materially to their life. A blanket long enough to be tucked in securely means not only greater comfort but much less strain on the blanket and longer wear. A sheet long enough so that it can be folded over the top of the blanket means less soiling and fewer launderings.

A good blanket should be sent only to a reliable cleaner who is known to have adequate blanket-cleaning equipment. It can be successfully laundered at home either by machine or by hand. In home washing it is important to remember that the wool fibers swell when wet, and are weakened; it is therefore advisable to complete the washing as quickly as possible. Spread the binding out on a flat, clean surface and scrub quickly with a soft, sudsy brush. Never use water any hotter than lukewarm either for washing or for rinsing. Use only a pure soap (such as *Kirkman's Soap Chips*, *Ivory Snow*, *Palmolive Beads*), as soaps containing alkaline builders (such as *Rinso* and *Oxydol*) are very detrimental to wool. [See "Laundry Soaps," *CONSUMERS UNION Reports*, August, 1936.]

If the blanket is to be washed in a machine, do not let the machine run longer than five minutes. If the blanket is still soiled in spots, rub the spots with a soft brush and soap, and then put the blanket back into the machine for another two or three minutes.

When washing by hand, squeeze plenty of soap suds through the blanket, but do not rub two portions of it together between the hands, as this will give the wool a tendency to felt; i.e., for the fibers of the nap to lie down and interlock, forming a smooth surface undesirable in a

blanket. After washing, press the excess water and suds out of the blanket, but do not wring. Probably even a mechanical roller-type wringer is inadvisable, and certainly hard hand twisting is.

Rinse in two or three changes of water, squeezing the water out after each rinse as quickly as possible. Hang the blanket over a line with equal weight on either side, and keep pressing the water out as it runs to the bottom for the first fifteen minutes. Do not dry in intense sunlight, as this is believed to weaken the fibers. As the blanket dries, shake it gently at intervals to restore the original fluffiness of the nap. After the blanket is thoroughly dry, the nap may be brushed up to further improve the appearance.

Those who are planning to purchase blankets should do so promptly, since increases in blanket prices are expected. This is due chiefly to large purchases of wool for uniforms and other war materials being made by governments all over the world.

Best Buys

Ward's Cat. No.—3190, fall-winter, 1936-7 catalog (Montgomery Ward & Co.). \$6.88 plus postage. Labeled size 72 x 84. Actual size: 80 x 88. Tensile strength: 46 lb. warp, 45 lb. filling. Weight: 15 oz. per square yard. Good heat retention. Pure silk and rayon satin binding of good quality. Well napped, and appearance uniform but not so attractive as that of some of the other blankets because of the comparative coarseness of the wool.

El Dorado (California Wool Growers Ass'n, 595 Mission St., San Francisco). \$9.25 plus postage. Labeled size 72 x 84. Actual size: 72 x 84. Tensile strength: 64 lb. warp, 53 lb. filling. Weight: 14.1 oz. per square yard. Good heat retention. Edges finished with worsted yarn. Appears to be made of very fine wool of higher quality than others tested. Well napped, and uniform weave.

Also Acceptable

CD Cat. No. E-1. (Cooperative Distributors, 30 Irving Place, NYC). Members' price, \$8.90; non-members', \$9.50. Labeled size 72 x 84.

Actual size: 73 x 84. Tensile strength: 41 lb. warp, 41 lb. filling. Weight: 15.3 oz. per square yard. Good heat retention. Rayon taffeta binding of fair quality. Good appearance, tightly woven, well napped.

Kenwood Arondac (Kenwood Mills, Albany, N.Y.). \$7.95. Labeled size 72 x 84. Actual size: 75 x 85. Tensile strength: 42 lb. warp, 22 lb. filling. (Note unbalance.) Weight: 13.6 oz. per square yard. Good heat retention. Pure silk and rayon satin binding of good quality. Good appearance, well napped and fairly uniform.

Golden Dawn (J. C. Penney Co., NYC). \$7.90. Labeled size 72 x 84. Actual size: 74 x 83. Tensile strength: 26 lb. warp, 29 lb. filling. Weight: 14.3 oz. per square yard. Best heat retention of those tested. Weighted silk and rayon satin binding of fair quality. Good appearance, fairly uniform weave, and well napped.

Mariposa (Shuler and Benninghofen, Hamilton, Ohio). \$7.78. Labeled size 72 x 84. Actual size: 78 x 83. Tensile strength: 36 lb. warp, 35 lb. filling. Weight: 13.6 oz. per square yard. Low heat retention. Pure silk and rayon satin binding of good quality. Fairly uniform weave.

Not Acceptable

Slumbersound Cat. No.—7507, fall-winter, 1936-7 catalog (Sears, Roebuck and Co.). \$6.98 plus postage. Blanket made for Sears by Esmond. Labeled size 72 x 84. Actual size: 78 x 87. Tensile strength: 28 lb. warp, 17 lb. filling. Weight: 12.1 oz. per square yard. Low heat retention. Pure silk and rayon satin binding of good quality. Not very uniform; a few thin places.

Gramercy (American Woolen Co., NYC). \$8.50. Labeled size 72 x 90. Actual size: 72 x 94. Tensile strength: 28 lb. warp, 16 lb. filling. Weight: 12.3 oz. per square yard. Low heat retention. All pure silk satin binding of excellent quality.

Sylvania (American Woolen Co., NYC). \$5.00. Labeled size 70 x 80. Actual size: 71 x 83. Tensile strength: 23 lb. warp, 8 lb. filling. Weight: 8.8 oz. per square yard.

Poor heat retention. Rayon taffeta binding of fair quality. The light weight of this blanket is no excuse for its very low strength.

12% Is Not 6%

GENERAL MOTORS, FORD, AND CHRYSLER are among a list of automobile manufacturers against whom complaints have been issued by the Federal Trade Commission charging them with misleading the public in advertising the time-payment plans under which their cars are sold.

Other companies cited in the complaints are: Nash, Graham-Paige, Hudson, Reo, and Packard, and several finance companies which carry the time-payment accounts of the various manufacturers.

Chief point of the complaint is that these corporations advertise that the charges made on their time-payment plans are at the rate of 6 percent, whereas they actually amount to about 12 percent per year. A person arranging to pay \$600, for instance, in twelve monthly installments, is charged 6 percent of \$600, or \$36. Actually the finance company's loan to him amounts to \$600 only for one month; at the end of that time he pays off a \$50 installment, leaving him owing only \$550. At the end of the second month his unpaid balance becomes \$500, at the end of the third, \$450, etc. Throughout the year, the amount which he owes varies from \$600 down to 0; on the average it is about \$300. A charge of \$36 on a loan which averages \$300 during the year amounts to 12 percent, or double the advertised rate.

In the Next Issue

MEN'S SUITS

MEN'S SOCKS

COLD REMEDIES

CHILDREN'S UNDER-WEAR

SHEETS

SHAVING CREAM

WIND, WATER and WEAR

Children's Snow Suits

SEVEN SNOW SUITS WENT TO THE laboratory for this test, and only one came back labeled a *Best Buy*. The specifications for outdoor winter clothing are, of necessity, rigid. No parent needs to be reminded that a child at play unwittingly provides a laboratory test for his clothing: a test so severe that few garments can survive with seams intact and colors flying, not running. The suit, moreover, must be warm enough to keep out biting winds, and comfortable enough to give utmost freedom of action at such times as when an unfriendly pedestrian decides on retaliatory measures after receiving a large snowball just above the collar.

One *Also Acceptable* suit earned a higher rating for quality than the *Best Buy*. Made by the manufacturers of Kenwood blankets, it was of luxuriously soft material, had by far the greatest durability, and surpassed all other suits in design and appearance. But the \$15 price, for size 6, made listing as a *Best Buy* impossible.

Of the suits priced from \$7 to \$9, one was a best buy, one acceptable, and the other not acceptable. The \$5 suits showed the most outstanding defects, but two were considered satisfactory considering price. The third, a chain store brand, was definitely unsatisfactory.

The Ideal Snow Suit

It is not hard to list the requirements for an ideal snow suit. In addition to a reasonable price, it should have:

1. All-wool, closely woven fabric for warmth and durability.
2. Fast dyes.
3. Large patch reinforcements for knees and inner leg. Reinforcements at other points are also desirable.
4. Knit neck-bands, anklets and wristlets for elasticity and warmth.
5. Roominess, preferably with raglan sleeves to prevent binding.

6. Shank attachments for buttons (tape instead of thread) and strongly sewn buttonholes—or a smoothly working zipper.
7. No unnecessary buttons or other ornaments to be broken or lost.
8. Two-piece design with adjustable suspenders, to allow for growth.

Most of these points can be checked easily by the buyer, but the problems of color fastness and wool content require an answer from the laboratory. The buyer can sometimes get a guarantee that the colors will not fade excessively or run, upon which a request for replacement could be made if the colors should not stand up.

As for wool content, which, by agreement in the trade, should be 98 percent or more in "all-wool" goods, labels are not reliable. Gimbel's department store in New York advertises regularly that "Gimbel's tells the truth," yet a snow suit from this exemplary firm was misbranded by much more than the breadth of a sheep's hair.

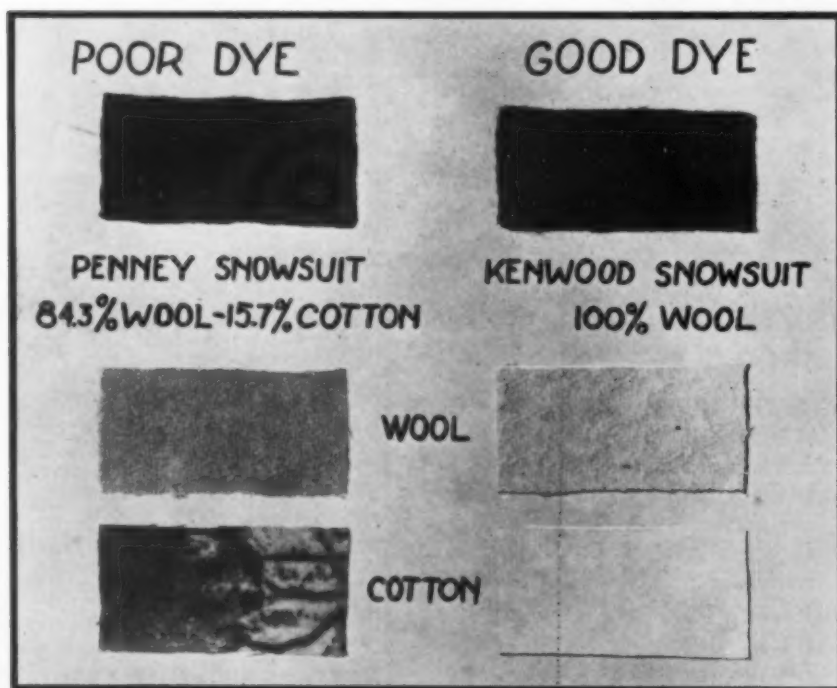
A Test for Warmth

One simple test for warmth, known to many experienced shoppers, is to hold the material against the light. If the light comes through easily, so will the wind. Warmth cannot be judged accurately by weight.

For protection against moisture, smooth-surfaced all-wool is again the best choice. "Waterproofing" and snowproofing processes such as "Nevawet" and "Cravenette" involve the deposit of insoluble soaps or waxes on the fabric. This treatment is more effective with cotton or rayon garments than with wool.

The *Penney* suit used in the test was so weak that it was possible to tear it apart with the hands. Mothers who do not know their own strength should be discreet in making this test before purchasing, unless the salesclerk agrees in advance to assume responsibility.

It may be helpful to remember that



POOR DYE RUNS TO WOOL OR COTTON WORN UNDERNEATH; GOOD DYE DOESN'T.

different dyes are required for cotton and for wool, and that suits of mixed fibers must therefore be dyed with both types. If poor dyes are used, the wool dye will run on other woolen garments and the cotton dye on other cotton garments. In some of the suits tested, the running of the dyes was bad enough to ruin other clothing worn underneath the snow suit. An advantage of a suit that is all wool is that there is no necessity to tint any cotton which otherwise is present. This lessens the tendency for the colors to run.

The seven suits selected for the test represented in each case only one of many colors and styles available in the brand.

Best Buy

Cravenette (Cravenette Co., Hoboken, N.J.). \$8.95. A 100 percent wool suit, lined with warm cotton flannel-ette in jacket and trousers and not-so-warm rayon in cap. It was the only suit tested that was entirely lined. A knitted vestee served for suspenders and provided additional warmth at the neck. Anklets and wristlets were also knitted; trousers were roomy, with adequate knee patches. Although the material was the lightest weight of any tested, it should provide sufficient warmth for all but very severe winter weather. Excepting for the vestee, the dye used was fast to water. Tensile strength good; resistance to abrasion fair.

Also Acceptable

(In order of merit)

Kenwood (Kenwood Mills, F. C. Huyck and Sons, Albany, N.Y.). \$15.00. A soft, medium-weight but 100 percent wool garment, with no linings in the model tested. The trousers, attached to a sateen vest, were held at the bottom by an elastic under the foot; no anklets or wristlets. (Other *Kenwood* suits can be obtained with anklets and wristlets.) It was a roomy suit, with large knee patches. The laboratory report showed that the fabric was almost twice as strong as the average of those tested, and in resistance to abrasion this material also rated highest. Color fastness excellent.

Shirley Temple (H. and J. Block, NYC). \$8.44. Heavy 100 percent wool in the suit fabric, plus the heaviest lining of any suit tested; wristlets and anklets of cotton and wool mixed. A double-breasted jacket, lined with flannelette; trousers supported by suspenders. Knee patches were rather small and the whole garment seemed skimpy. Buttonholes less sturdy than those of other suits. Tensile strength fair; resistance to abrasion good; but color fastness very poor.

Montgomery Ward No.—3975 (Montgomery Ward & Co., mail-order). \$4.85 plus postage. Qualified as an all-wool suit because of 98 percent wool in the trousers and 99 percent in the jacket; light weight. Double-breasted, with lining in the jacket, this suit had a double thickness collar with a zipper arrangement for making a parka hood. The knit anklets and wristlets were of mixed cotton and wool. Trousers were supported by an elastic in the waist and none too sturdy suspenders. The garment was very skimpy, making it advisable to order a generous size. Tensile strength, resistance to abrasion, and color fastness, fair.

Gimbel's No. 747 (Gimbel Brothers, NYC). \$4.97. Typical of the many inexpensive, unbranded suits sold in any store that handles children's clothing, this garment was not quite so good as the *Montgomery Ward* model at \$4.85, but rated well above

the *Penney* suit at \$4.98. All three of these suits in the \$5.00 class had shortcomings that must be reckoned with in buying unlabeled goods. This suit, for example, was misbranded "all wool," since the jacket was only 66 percent wool and the trousers 95 percent. There was lining in jacket and cap. Trousers, of the suspender type, had small knee patches and scant room from waist to crotch. Tensile strength was poor, but the material resisted abrasion well. Color fastness was poor.

Not Acceptable

Sears Roebuck No.—4822 (Sears, Roebuck and Co., mail-order). \$6.95 plus postage. Cap 59c extra. This suit had 98 percent wool in the trousers and 90 percent in the jacket. The trousers were of heavy material, held by an elastic and suspenders. The zipper-front jacket was lined, and fitted with raglan sleeves. Knee patches were missing. Tensile strength and resistance to abrasion were fair. Color fastness was fair for the trousers, poor for the jacket.

J. C. Penney Lot No. 42-87 (J. C. Penney Co., NYC). \$4.98. Misbranded as "all wool," this suit had only 84 percent wool in the trousers and 95 percent in the jacket. Poorest of all garments tested in tensile strength, resistance to abrasion and color fastness, it is rated as unsatisfactory at any price.

The Woolen Mill Worker

A LITTLE MORE THAN A YEAR AGO 1,000 textile mill workers of Paterson, N.J., met in the opera house—locally known as the "music hall"—to take a strike vote. It was a stirring assembly of Italians, Syrians, Spaniards, Jews, Portuguese, "native" Americans—practically every nationality of this major melting pot among mill towns.

The decision was no easy one. Mill owners, their profits destroyed by a price-cutting war, were moving their looms to other towns to escape the union's demands. Those who remained in Paterson were violating their union contracts by paying wages of \$10 and

\$12 a week, and even less. Chiseling on piece-work was widespread. Few of the looms were equipped with pick-clocks, and weavers were being paid for less yardage than they actually produced. Workers who formerly operated four looms were being required to tend six, thus increasing the list of unemployed.

One hard-bitten weaver, veteran of strikes dating back to before the war, shouted for recognition from the chairman.

"I tell you," he cried, "that we cannot strike. It would be suicide to strike!"

A young Italian girl, with more native beauty than the mills could efface, was on her feet before he finished.

"Fellow workers!" she called above the tumult, "it would be suicide not to strike!"

Perhaps both were right. The strike was voted, and dragged along for weeks to a futile end. Paterson mill workers are still being paid starvation wages, when they work; those who can't work are starving very little faster on the New Jersey dole.

Average Wage Is \$16

What happened in Paterson concerned silk-mill workers, but the story in other divisions of the textile industry today differs in few important particulars. The average wage in the woolen blanket mills, for example, is about \$16 for a 40-hour week. This is exactly one-third of the generally accepted minimum for the American standard of living. Thousands of workers, of course, receive less than the average; and the yearly income is pulled down by seasonal layoffs. Early in 1936 it was estimated that the annual earnings of the woolen worker average \$500.

None of the manufacturers whose products were included in the current reports on blankets and children's snow suits operate under contract with the United Textile Workers of America, and it is therefore impossible to make any recommendations for union-label buying. Special mention should be made, however, of American Woolen Company, largest producer in this group.

Early in the depression this company hired new executives and got ready to make money. Employees' wages were slashed drastically. One cut was said to have been accepted by the operatives—the alternative presented by the management was increasing the work week to 54 hours, with no extra pay. The share-the-work plan was put into effect at the big plant in Lawrence, Mass., where weavers earned from \$3 to \$18 a week. Local relief authorities refused to aid any family in which a mill worker got even one day's work during the week.

When conditions became intolerable, the operatives struck. The town of Lawrence is a difficult one for strikes. The banks own a majority of the

homes, and the mill owners own the banks. When unemployed families are evicted, their belongings are taken to a city warehouse, where storage is charged. Perhaps it is no exaggeration to say that the mill owners also may claim the city government, including the police, and that newspaper editorial opinion reflects the owners' views faithfully. When the strikers voted on the question of going back to work, Lawrence police clubbed the strike leaders, dumped them in jail, and held them under \$40,000 bail each on charges of conspiracy to injure the business of the American Woolen Company, until the farcical election was safely over.

The company is not insensitive, however, to public opinion. About one year after the strike a group of students from Harvard, Massachusetts Institute of Technology, Colby, Tufts, and other colleges wrote for permission to inspect the company's plant and get first-hand information on the woolen worker's life. The request was granted. One day before the trip the company canceled its permission, without any explanation. But the students, members of the National Students' League, went to Lawrence anyway, and were amused to find that the

More Radio Sets

In the ratings given in the November issue it was impossible to make a thorough and complete coverage of all the different price ranges and types of receivers. We are preparing material on the higher-priced receivers (from \$75.00 up) in order to publish supplementary listings in the near future. Preliminary information indicates that the *Zenith* Model 8-S-129 is a best buy at \$74.95 (table model); and that the following models are acceptable: *Zenith* Models 12-U-158 at \$149.95 and 12-U-159 at \$175.00, and *Stromberg-Carlson* Models 130U at \$76.50 (table model) and 140L at \$149.50.

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local police shadowed them. A social worker for the Young Women's Christian Association told the visitors that mill workers were so afraid of company spies that they refused to answer routine questions for her case records.

The company's policy of wage cuts and efficiency engineering (known to workers as the "speedup") finally paid handsome dividends. For the year 1933 net profits were more than \$7,000,000. President Lionel J. Noah took \$358,185 of this sum; William B. Warner, chairman of the board, received only \$200,740, but as one disgruntled stockholder said, Mr. Warner was also being paid \$135,000 for his main job as president of McCall Publishing Company. Obviously there was nothing left for substantial wage increases to the mill operatives, since a number of other executives were given proportionately handsome salaries and bonuses.

Irrelevant, perhaps, but definitely interesting was the annual meeting of American Woolen stockholders last spring, which almost developed into a riot through the protests of a minority group against Mr. Noah's management. To the charge that one stenographer was being paid \$12,000 a year to clip newspaper advertisements, Mr. Noah made no answer. Not long after, he retired, fearing undue strain on his health.

No executive faces the health hazards of the mill operatives, who can retire to nothing except existence on an uncertain dole. Mechanical injuries are common; many workers are maimed by gears or belts in which fingers or hands are caught. Dust presents a constant danger of tuberculosis; temperature variations and dampness result in Bright's disease and other illnesses; dye poisoning is quite common, and the dreaded anthrax (or wool sorter's disease) is occasionally acquired. Partial or total deafness is not uncommonly caused by the constant roar of machinery. Repeated motion in itself is a hazard, which results not only in muscular strain but also, in many instances, in inflammation of the surrounding sheaths or even paralysis.

The most hated man in the woolen mills is, perhaps, not the foreman, but the "fish" man, or efficiency engineer. His job is to measure in split seconds the time required for each operation.

TOMATO JUICE

A Good Food at Low Cost

THE SAMPLES OF TOMATO JUICE COVERED in this report were graded by the Bureau of Agricultural Economics of the United States Department of Agriculture. To determine uniformity, samples of several more widely distributed brands were purchased at stores in various parts of the United States. Unlike other canned products among which one brand may represent very good quality in the East or on the Pacific Coast and very poor quality in the South, with the exception only of *Libby's* the different samples of each brand were of about the same quality whether they came from the East, the West, or the South. *Campbell's* and *Heinz* tomato juice, for example, were found to be of good quality in all parts of the country, while the much advertised *Del Monte* brand was consistently of poor quality.

Only products having no added flavor, or at the most only a very small amount of salt, were included in the test.

At opposite ends of the scale of cost were found *Butler's* tomato juice, which would cost about two cents for a five-ounce serving, and *Welch's*, costing about five cents for the same amount.

Good Flavor Essential

Tomato juice is graded on the basis of flavor, color, consistency, and absence of defects. High-grade tomato juice must have the flavor typical of well developed, ripe tomatoes. Flavor that is fair but acceptable places the juice into the C Grade; off-flavor tomato juice is rated as substandard.

Well prepared tomato juice should be the color of the well ripened tomato. Brown, orange, or yellow tones place the juice in a lower-grade group.

Consistency rating refers to two qualities: the viscosity (thickness) and the tendency for the solid part of the juice to separate from the liquid.

Some well known brands prove deficient in flavor, color, and consistency. As a source of vitamin C, tomato juice is cheaper than oranges. If you buy College Inn or Butler brands, a large serving costs about two cents.

Good tomato juice should flow readily, but without being thin and watery. There should be no separation into layers when the juice is allowed to stand.

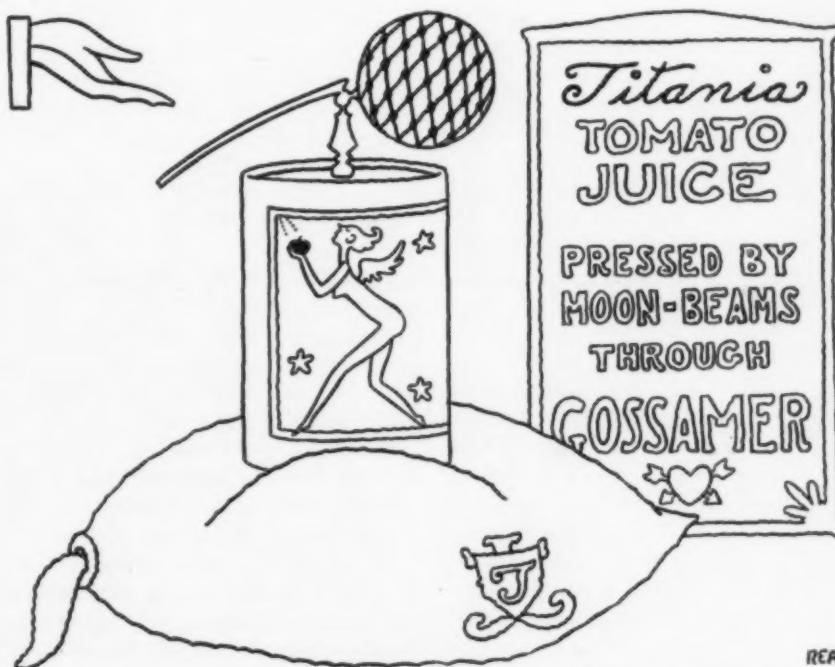
Scores Must Be High

Absence of defects relates to the care which went into the preparation of the juice, as reflected in freedom from skins, seeds, specks, or pieces of core.

The scoring of tomato juice by government graders is not equivalent to the scoring of other fruits and vege-

tables. Where a score of 90 is high for canned apricots, for example, it is fairly low for tomato juice. A very good juice would score at least 93. Anything below 85 is rated by the government graders as C (there is no B rating), as is any juice which fails to meet Grade A specifications for any one of the rated qualities; 84—the score of *White Rose* and the poorest samples of the several tested of *Libby's* and *Del Monte*—is considered very poor. *Libby's* "gentle press" method does not always produce a uniform or good tomato juice.

Most people find tomato juice a pleasant beverage, and it is a good source of vitamin C. Despite the efforts of the citrus growers to convince the American public that they must drink large quantities of orange juice to protect their teeth and health, orange juice is not at all an essential part of the diet. Tomato juice is a satisfactory source of vitamin C, supply-



PREDICTION FOR 1937: WHEN LIBBY'S Gentle Press BECOMES TOO ROUGH.

REA

BRAND	SCORE	PACKER OR DISTRIBUTOR	LABELED VOLUME	PRICE PER CAN	COST PER 5-OUNCE SERVING IN CENTS ³
EXCELLENT QUALITY					
College Inn*	93	College Inn Prod. Co.	48 fl. oz.	24c	2.10c
Red & White	94	Red & White Corp.	15 fl. oz.	9c	2.80c
Kemp's Sun-Rayed	93	The Sun-Rayed Co.	12 fl. oz.	7½c	3.00c
Richelieu	93	Sprague, Warner & Co.	13½ fl. oz.	10c	3.30c
Lily White	93	R. H. Macy & Co.	26 fl. oz.	17c	3.90c
GOOD QUALITY					
Butler	91	James Butler Grocery Co.	12 fl. oz.	5c	2.00c
Iona	92	A & P	10 fl. oz.	5c	2.25c
Ritter	91	P. J. Ritter Co.	10 fl. oz.	5c	2.40c
Stokely's	90	Stokely Bros. & Co.	23 fl. oz.	12c	2.40c
Webster	91	G. L. Webster Co.	20 fl. oz.	10c	2.55c
Ann Page	92	A & P	12½ fl. oz.	6½c	2.60c
Van Camp	91	Van Camp, Inc.	14 fl. oz.	8c	2.60c
Campbell's	92 ¹	Campbell Soup Co.	14 fl. oz.	9½c ¹	3.00c ¹
			10 fl. oz.	7c	3.25c
Beech Nut	92	Beech Nut Packing Co.	12½ fl. oz.	9c	3.45c
Heinz	91 ¹	H. J. Heinz Co.	12 fl. oz.	9½c ¹	3.65c ¹
			11 fl. oz.	10c	4.15c
Welch	92	Welch Grape Juice Co.	16 fl. oz.	18c	5.15c
POOR QUALITY					
White Rose	84	Seeman Bros., Inc.	18 fl. oz.	9c	2.20c
Del Monte	86 ¹	Calif. Packing Co.	15 fl. oz.	8½c ¹	2.55c ¹
			18 fl. oz.	10c	2.55c
Libby's	89 ^{1,2}	Libby, McNeill & Libby	13½ fl. oz.	7¼c ¹	2.45c ¹
			14 fl. oz.	9c	2.95c
			7¾ fl. oz.	5c	2.85c
Phillips	89 ¹	Phillips Packing Co.	10 fl. oz.	10c	4.75c
			10¼ fl. oz.	5c	2.45c

* Unflavored.

¹ Average for samples from various sections of the country.

² Showed wide variation in quality among samples tested.

³ Figures are based on actual net weights.

RATINGS OF 20 BRANDS, IN ORDER OF COST WITHIN EACH GROUP.

ing from one-third to one-half as much vitamin C as freshly made orange juice. In a normal, well balanced diet one does not need to worry about particular vitamins. On a restricted diet, such as might be found on the table of a typical factory worker earning twenty or twenty-five dollars a week and having a large family, or of a family on relief, the adequacy of vitamin supplies does become impor-

tant. In such a diet, tomato juice is entirely satisfactory as a source of vitamin C. Young children and pregnant women will require larger quantities of tomato juice than they would of orange juice, but in view of the much lower cost of tomato juice than of oranges in most parts of the country, tomato juice will be generally less expensive despite the larger quantity required.

With modern canning methods little of the original vitamin C content of the tomatoes is lost. There is a considerable loss, however, after the can is opened if it is allowed to stand for some time before being used. Cans should not be opened until just before they are to be used, and if any remains it should be kept in a closed jar.

Tomato juice also contains some vitamin A and vitamin B.

THE VITAMIN STAMPEDE

THE OTHER DAY I SAW A WOMAN with indigestion and a nervous breakdown. The story was puzzling until the husband explained, feelingly, that at each mealtime his wife wrangled with the children over the eating of spinach and carrots and the taking of cod-liver oil until everyone at the table was exhausted and in a bad humor. Was this necessary? Will the children of this fairly well-to-do, middle-class American family come to grief if the mother stops stuffing them? I think the chances are that they will not.

While I do not wish to minimize the value of modern dietetic research and its splendid discoveries, I still feel that we are passing through a stage of experimentation in which vitamins are being forced on children and adults without sufficient thought and understanding. The historically minded man cannot help remembering that every substance ever found useful in the prevention or care of disease once had to go through a stage during which it was given for everything.

Certainly most of us will be better satisfied about the use of vitamins when research workers are able to tell us how much of what is learned from experiments on rats is applicable to man, and particularly to adult man. Already we know that the rat does not react to the lack of vitamins in all respects as man does. Incidentally, individual men react differently to lack of vitamins. As every polar explorer knows, in the old days some men promptly succumbed to scurvy while a few seemed to be almost immune.

We physicians also want to know how much of the several vitamins must children and adults get every day to remain in health? We want to know also if it does any good to keep stuffing a child with vitamins after it has enough. Recently I saw a woman with indigestion and a number of curious symptoms produced apparently by the taking of a quart of orange juice a day. Unfortunately, the pyorrhea which

Reprinted in part, by permission, from an article by Dr. Walter C. Alvarez of the Mayo Clinic, published in the American Journal of Digestive Diseases and Nutrition.

her dentist had hoped to cure with an overdose of vitamin C, was still present.

It may well be that there is a number of diseases that can be cured with the help of large doses of some one vitamin, but I cannot help looking with a little scepticism on some of the enthusiastic papers that are now being published. Usually the work is not done so that one can be sure that vitamins alone produced the improvement noted in the patient; and, again, the historian reminds us that the easiest road to the front page of scientific magazines has always been through the reporting of startling cures obtained with a new and popular therapeutic agent.

Large Doses Harmful

We know that large doses of vitamin D will kill an animal in a short time, and we know that smaller doses injure the arteries. Under these circumstances, it is well that several research workers are trying to fix the upper limit of safe dosage. Today, the desire of purveyors of food and popular drugs to advertise that their product is full of vitamins is so strong that they may go too far and something may have to be done to restrain them.

Let us imagine a child who, to begin with, does not need extra amounts of vitamin D, because he is out in the sun all day. He is getting all he needs in his food, and his bones are growing straight and strong. But his well intentioned mother is forcing on him large doses of the very powerful, irradiated ergosterol; he is getting more "D" in his pint or more of irradiated

milk; the cows which supply the milk are being fed yeast and other substances to increase the vitamin content of the cream and butter; the baker is adding "D" to his bread; and, as I write, manufacturers of breakfast foods and chewing gum, and even cough drops, are hastening to join in the race.

If present practices keep up, I fear that before long the Government will have to step in and say that vitamin D may be added, let us say, to milk and/or bread, but not to other foods.

The worried housewife should be taught that vitamins are so largely concerned with growth that they are most important to the pregnant woman, the nursing mother, and the growing child. In adult life, and when there is no extra stress, such as that of pregnancy, lactation, or prolonged illness, they are less important, and there seems to be little reason for forcing them on people who are already living on a liberal and well chosen diet.

One of the sales arguments for giving vitamin A has been that it will prevent colds or make such infection milder. Although some experiments on animals and children suggested that this might be true, two reports of controlled studies on two groups of persons, one given extra amounts of vitamins and the other not, now show that these substances cannot be counted on to influence respiratory infections.

The medical profession would probably do well to point out to the worried dietitians and mothers of families that disease which can be definitely ascribed to avitaminosis [lack of vitamins] is very rarely seen among American adults of the middle or upper classes. Even the physician with a very large practice will see only a few cases a year in which he will suspect that the symptoms are due to too great a narrowing of a diet. Usually, such a patient is old; he may be a recluse who cooks for himself, or a

VITAMINS

(Continued)

psychopathic food crank who is fussy about eating and is full of prejudices; or he may be a red-nosed bum who has been trying to live on whiskey. Not infrequently the victim is a patient with peptic [stomach] ulcer or ulcerative colitis [intestinal inflammation] who has been living too long on milk and little else.

Advertisements in the magazines and the propaganda of food faddists have given many laymen the idea that the foods rich in roughage and vitamins are the most digestible and health-giving. This view must be combatted, and at times it must be pointed out to people that, especially when they are suffering with indigestion, they can easily obtain desired vitamins without eating a lot of indigestible cellulose-containing food. They can now buy vitamins in a concentrated form at the drugstore.

Sometimes I wonder if the present tendency to feed infants with foods formerly reserved for children and adults is having anything to do with what seems to be a tremendous increase in the incidence of hayfever

and other disorders of allergic origin. There are reasons for believing that the intestinal mucous membrane of the infant is more permeable to foreign protein than is that of the adult.

Certainly many of the sufferers from allergic disease seen today were born before the era of spinach and orange juice, but if it should appear later that part of the increase in the incidence of allergic disease is due to the sensitization of infants and children by too early stuffing with foreign protein, then we will have to avoid this; and if in that future day we still desire to give overdoses of vitamins, then, at least in the cases of the children of allergic parents, we will have to give the vitamins and salts in pure form, as is now done in the case of dietetic research with rats.

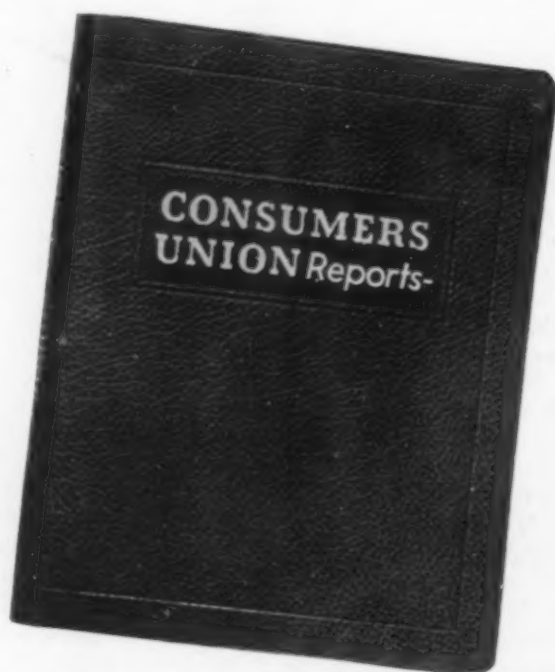
Unfortunately, as yet, it has not occurred to many people that one does not have to sensitize a child to orange juice in order to give him a milligram of ascorbic acid, nor does one have to stuff him with eggs or spinach in order to supply a little iron. Incidentally, Rohmar, Bezsonoff, and Sanders now claim that an infant up to the age of fourteen months can make his own vitamin C.

CONSUMERS UNION Reports

A PLATFORM

PROFESSOR COLSTON E. WARNE, President of Consumers Union, appeared for consumers at the meetings called by Coordinator George Berry in Washington, D.C., Dec. 10th. Dr. Warne insisted on consumer representation in any agencies set up by the Government for control of industry. The platform for consumer protection which he presented included the following points:

1. A Government consumer agency, to collect information for, and generally serve, the consumer.
2. Consumer representation on all boards and committees set up to regulate industry.
3. Government encouragement of consumer cooperatives.
4. A new food, drugs, and cosmetics law, including provisions for control over advertising, which will adequately protect the consumer.
5. The findings of the Bureau of Standards to be made available to consumers.



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